

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 32B100
STATION NAME: Touchet River at Bolles Road
WATER YEAR: 2013
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Introduction

Watershed Description

The Touchet River, the largest tributary of the Walla Walla River, flows out of the Blue Mountains in southeast Washington. Spring Chinook, steelhead, and bull trout are present within the watershed. Land use is primarily agricultural, consisting of dryland crops and irrigated farming in the lower portions.

Gage Location

This gage is located on the right bank, downstream of the Highway 125 Bridge, 3.5 miles west of the town of Waitsburg. It is located at river mile 40.4.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	357 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 16' 28" N
Longitude (degrees, minutes, seconds)	118° 13' 16" W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	219
Median Annual Discharge (cfs)	156
Maximum Daily Mean Discharge (cfs)	1050
Minimum Daily Mean Discharge (cfs)	31
Maximum Instantaneous Discharge (cfs)	1130
Minimum Instantaneous Discharge (cfs)	29
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	478
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	39
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	24
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	24
Number of Modeled Days	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Table 2 Discussion (Discharge Statistics)

The 24 estimated days are the days in which the predicted discharge would have been less than one-half of the lowest measured discharge associated with the respective rating.

Eight discharge measurements were taken throughout the water year, ranging from 42 to 808 cfs.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	0.80
Potential Weighted Rating Error (% of discharge)	9.3
Total Potential Error (% of discharge)	10.1

Table 3 Discussion (Error Analysis)

The potential logger drift refers to the amount of instrument drift that was corrected in the stage record.

The potential weighted rating error is based on the quality of the individual discharge measurements used to define the particular rating and how those defining measurements related to the rating.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	2.33
Maximum Recorded Stage (feet)	4.99
Range of Recorded Stage (feet)	2.66

Table 4 Discussion (Stage Record)

Peak flow occurred on April 20, 2013, during spring run-off. The lowest flow of the water year occurred in late August, 2013.

Table 5. Rating Table Summary

Rating Table No.	9	10	801
Period of Ratings	10/1/12 to 4/29/13	4/20/13 to 7/8/13	5/28/13 to 9/18/13
Range of Ratings (cfs)	21 to 2020	29 to 2020	26 to 7780
No. of Defining Measurements	11	9	10
Rating Error (%)	9.3	9.5	9.3

Rating Table No.	101		
Period of Ratings	7/8/13 to 9/30/13		
Range of Ratings (cfs)	29 to 2020		
No. of Defining Measurements	9		
Rating Error (%)	9.5		

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Table 5 Discussion (Rating Tables)

The first two rating shifts were due to seasonal run-off. The last shift was due to a build-up of instream vegetation.

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	6.0 to 9.48
Range of Modeled Discharge (cfs)	1780 to 7780
Valid Period for Model	5/28/13 to 9/18/13
Model Confidence	2.1%

Table 6 Discussion (Modeled Data)

The slope conveyance model is based on a cross-section and longitudinal survey and on data from three discharge measurements that were taken under channel control.

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
Station, X-Section, Long.	9/27/11

Table 7 Discussion (Surveys)

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Activities Completed

Routine station visits for maintenance and discharge measurements.

Appendix